

**Abstract**

The Concept proposed here is to form a Conceptual Design Center to offer fast, affordable design services to an expanded range of potential clients. It should have these features:

- ▶ Work space and modest shop facilities for model making and rapid prototyping.
- ▶ Powerful workstations and software for CAD, CAM, and presentation graphics.
- ▶ A small interdisciplinary team with different specialties but overlapping skills.

The mission is review a clients 'problem' and render conceptual designs as sketches, drawings, mockups, models, and prototypes.

**Value to potential users**

- ▶ Fast development of their ideas from sketches and drawings to mockups, models, and prototypes.
- ▶ Modest cost, 'bite-sized' bodies of effort, quick turn around response.
- ▶ Rich data to evaluate costs, performance, and options in advance of committing to a large project.

**Value to the Engineering Division**

- ▶ Access to a new range of clients.
- ▶ Enhanced services available to existing clients.
- ▶ A highly visible 'Front door' to the Engineering Division.
- ▶ Expanded use of engineering service.
- ▶ More integrated use of engineering services.
- ▶ Potential 'Special projects' capability.
- ▶ Potential internal 'Start-up' capability.
- ▶ Mechanism for forming partnerships and collaborations.

**Space requirements**

2000+ s.f. with approximately the following features:

- ▶ Open conference / work area
- ▶ Cubicle space
- ▶ Dirty shop (makes chips and dust)
- ▶ Clean shop (no chips, no dust)
- ▶ Assembly / presentation area
- ▶ Loading dock access
- ▶ Utilities (including shop air)
- ▶ Reconfigurable floor plan

**Equipment requirements**

- ▶ Office equipment and furniture for 6 people.
- ▶ Modest machine shop able to handle wood, plastics, and metals.
- ▶ Stereo lithography machine
- ▶ 5-axis N/C mill
- ▶ Small thermo-forming rig
- ▶ A few powerful CAD/CAM workstations and software.

**Key personnel and Staffing**

1 to 3 principals + additional team members recruited as projects demand.  
All are selected for appropriate specialties and overlapping skills.  
Candidates and comments are appended as a separate page.

**Short term goals or Getting started.....**

- ▶ Visit other organizations that have Conceptual Design Center operations.
- ▶ Compile a list of potential clients and sources of new business.  
( this may be already done )
- ▶ Review existing proposals, and expressions of interest for new business.  
( Start with Deb Hopkins' sources? )
- ▶ Locate and negotiate for space.
- ▶ Review equipment inventory and earmark desired shop machinery.
- ▶ Review computer hardware/software inventory. Make a shopping list.
- ▶ Research N/C and Stereolitho equipment and make a shopping list.
- ▶ Recruit a startup team, pick potential projects and draft a plan to approach the first clients.

**Long term goals**

- ▶ Develop an expanded clientele and provide specialized services to existing clients.
- ▶ Accelerate and support the launching of new projects.
- ▶ Provide a showcase for Engineering Division capabilities.
- ▶ Succeed and have fun doing it.

**Recruiting**

I would propose that the first order of business is to recruit a team to draft a conceptual design of the Conceptual Design Center. See Short term goals, above

The following lists are made of loosely qualified team candidates.

Some have expressed an interest in the Conceptual Design Center.

Some have experience in similar programs.

Some are people I would like to work with on this project.

Others, not on this list, may be good candidates but are not aware of this opportunity.

Candidates for key personnel:

Robin Lafever

James Osborn

Craig Peters

Mark Nyman

Doug Fritz

Joseph Rasson

Alan Wandesford

Matt Bjork

Nord Andressen

Gary Kohler

Rob Duarte

Others.....

More team candidates:

Steve Dardin

Guy Pulsifer

Mark Campagna

Lon Amerman

Others...

**Some thoughts**

Over the last few weeks I have broached the notion of a Conceptual Design Center with a wide range of people at the lab. It is clear that there are as many ideas about what the Design Center should be as there are people. It is also clear that the ideas center around variations of capabilities already in place.

The strategic relevance of a Design Center is based on the notion of enhancing our current capabilities with new skills and methods. The models I have in mind are common in Industrial design houses, Architectural offices, and even in the Movie industry. They are not part of , and may be viewed as antithetical , to the lab culture. In any event, few of us have direct experience with these processes and no clear appreciation of the potential benefits. Some outside help may be appropriate here.